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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,291	08/22/2003	Arthur Berman	356508.01501	9383

7590 10/29/2004
John W. Carpenter
REED SMITH CROSBY HEAFY LLP
P.O. Box 7936
San Francisco, CA 94120-7936

EXAMINER

LAVARIAS, ARNEL C

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/646,291

Applicant(s)

BERMAN, ARTHUR

Examiner

Arnel C. Lavarias

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-70 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-70 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-56, 59-60, drawn to a light management system, prism assembly, kernel assembly, and display device, all including at least one optical element or beam splitting element utilizing a cholesteric layer, variously classified in Class 359, subclasses 831, 629; Class 349, subclasses 115, 193.
 - II. Claims 57-58, drawn to a method of constructing a prism assembly, including the steps of fixing a set of beam splitting devices in position, and filling voids between the beam splitting devices with an optical coupling fluid, classified in Class 359, subclass 832.
 - III. Claims 61-70, drawn to a beam splitter, including a first optical element having a first beam splitting face, a second optical element having a second beam splitting face generally abutting the first beam splitting face, and a cholesteric layer disposed between the first and second beam splitting faces, classified in Class 349, subclass 193.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I/III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP §

806.05(f)). In the instant case, the products claimed can be made by another and materially different process that does not include the process steps of fixing a set of beam splitting devices in position, and filling voids between the beam splitting devices with an optical coupling fluid.

3. Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the light management system, prism assembly, kernel assembly, and display device (i.e. the combination) does not include the particulars of the disposition of the cholesteric layer within a single beam splitter (i.e. the subcombination). The subcombination has separate utility such as in light valves and projectors, as well as in optical communications systems utilizing polarization.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
5. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I and III, restriction for examination purposes as indicated is proper.

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6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

7. This application contains claims directed to the following patentably distinct species of the claimed invention:

Applicant is required to elect one of the following species if election is made to

Invention I:

Species 1- drawn to a light management system including a prism assembly having at least one beam splitting component utilizing a cholesteric layer configured to pass and reflect light beams to predetermined faces of the beam splitting component. Claims 1-2, 43-44.

Species 2- drawn to a prism assembly, including an input beam splitter, a first component beam splitter, a second component beam splitter, and an output beam splitter, wherein at least one of the first and second component beam splitters is a cholesteric based beam splitter, and further wherein the cholesteric based beam splitter comprises a beam splitting component having two cholesteric layers. Claims 10-12, 38-41, 45, 49-52.

Species 3- drawn to a prism assembly, including an input beam splitter, a first component beam splitter, a second component beam splitter, and an output beam splitter, wherein at least one of the first and second component beam splitters is a cholesteric based beam splitter, and further including a quarter waveplate placed in a lightpath between the input beam splitter and cholesteric based beam splitter. Claims 13-15, 19.

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Species 4- drawn to a prism assembly, including an input beam splitter, a first component beam splitter, a second component beam splitter, and an output beam splitter, wherein at least one of the first and second component beam splitters is a cholesteric based beam splitter, and further wherein at least one face of the first component beam splitter along with two faces of the second component beam splitter are arranged in pathlength matched positions. Claims 32-37.

Species 5- drawn to a prism assembly, including an input beam splitter, a first component beam splitter, a second component beam splitter, and an output beam splitter, wherein at least one of the first and second component beam splitters is a cholesteric based beam splitter, and further the at least one beam splitting component comprises two prism components oriented such that diagonals of the two prism components are facing each other and at least one cholesteric layer disposed between the diagonals of the prisms. Claim 46.

Species 6- drawn to a kernel, including a set of optical components configured to input light into separate light beams and direct each of the separate light beams into corresponding processing devices and recombine outputs of the processing devices into a kernel output light beam, wherein at least one of the optical components comprises a cholesteric layer. Claims 21-25.

Species 7- drawn to a kernel assembly and display device, including a set of four beam splitting devices arranged in a cube and three reflective microdisplays each individually and externally mounted on three faces of the beam splitting devices, wherein one of the beam splitting devices is a cholesteric based beam splitter. Claims 26-27, 55-56.

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Species 8- drawn to a prism assembly including a set of optical components arranged in pathlength matched positions such that optical distances from each set of processing faces of the optical components to a reference plane are equivalent, and at least one of the optical components comprises a cholesteric layer. Claims 28-30, 47-48.

Species 9- drawn to prism assembly means, including cholesteric means, and at least one means for directing individual light beam paths internal to the prism assembly toward predetermined faces of the prism assembly means using the cholesteric means. Claims 59-60.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claims 42 and 53 are generic to all of Species 1-9 of Invention I only. Claims 3 and 31 are generic to Species 2-5 of Invention I only.

It is additionally noted that Claims 54 will be examined along with any of elected Species 1-9 only if Invention I is elected. Claims 4-9, 16-18, 20 will be examined along with any of elected Species 2-5 only if Invention I is elected.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all

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the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

8. A telephone call was made to John W. Carpenter (415-659-5927) on 10/29/04 to request an oral election to the above restriction requirement, but did not result in an election being made.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST.

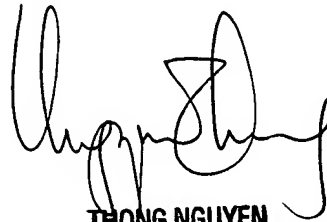
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnel C. Lavarias
10/29/04



THONG NGUYEN
PRIMARY EXAMINER
GROUP 2800